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E 20040167366 /PN

E 20040167366/PN

E US20040167366/PN

L1 1 S E3

L2 1008 S FLUORINATION CATALYSTS/IT

L3 41755 S HYDROGENATION CATALYSTS/IT

L4 9 S L3 AND L2

=> d bib abs kwic 1-9

L4 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:1057839 CAPLUS

DN 142:184141

TI Catalytic applications of composite aerogels

AU Suh, Dong Jin

CS Clean Technology Research Center, Korea Institute of Science and Technology, Seoul, 136-791, S. Korea

SO Journal of Non-Crystalline Solids (2004), 350, 314-319

CODEN: JNCSBJ; ISSN: 0022-3093

PB Elsevier B.V.

DT Journal

LA English

AB Unitary and composite aerogels with high sp. surface areas and pronounced mesoporosity have been prepared by the controlled sol-gel method and subsequent carbon dioxide supercrit. drying and heat treatment. The aerogels were characterized by N2 adsorption-desorption, thermal analyses (TGA-DTA), X-ray diffraction (XRD), temperature-programmed desorption (TPD), temperature-programmed reduction (TPR), IR spectroscopy (IR), transmission electron

microscopy (TEM), and reaction tests. The composite aerogels containing extremely small active metal particles showed strong metal-support or metal-metal interactions. The specific catalytic behaviors of aerogel catalysts are explained in terms of their unique textural and chemical properties.

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT Aerogels

Catalysis

Catalysts

Composites

Fluorination catalysts

Hydrogenation catalysts

Oxidation catalysts

Photolysis catalysts

Porosity

Sol-gel processing

Surface area

(catalytic applications of composite aerogels)

L4 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:701855 CAPLUS

DN 141:227253

TI Catalytic hydrogenation and fluorination process for purifying hydrofluoropropanes

IN Rao, Velliyur Nott Mallikarjuna; Sievert, Allen C.

PA USA

## CAS ONLINE PRINTOUT

SO U.S. Pat. Appl. Publ., 9 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004167366	A1	20040826	US 2003-734946	20031211
PRAI	US 2002-433295P	P	20021213		

OS MARPAT 141:227253

AB A process is described for purifying a hydrofluoropropane of undesirable C2-4 olefinic and C1-4 saturated chlorinated impurities, comprising: contacting a first mixture of hydrofluoropropane, olefinic impurity and saturated chlorinated impurity with hydrogen and hydrogen fluoride concurrently in the presence of a bifunctional catalyst, for example an alloy of gold and palladium supported on carbon, capable of catalyzing hydrogenation and fluorination. During the contacting step, the olefinic impurity is converted into a saturated hydrogenated derivative and/or saturated hydrofluorinated derivative, and the saturated chlorinated impurity is

converted

into a saturated hydrodechlorinated derivative and/or a saturated fluorinated derivative

The hydrofluoropropane thus formed is substantially free of both the olefinic and saturated chlorinated impurities and may be used as obtained or subjected to further purification steps.

IT Fluorination catalysts

Hydrogenation catalysts

(transition metals; catalytic hydrogenation and fluorination process for purifying hydrofluoropropanes)

L4 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2006 ACS on STM

AN 2004:558975 CAPLUS

DN 141:224837

TI Enantioselective Palladium-Catalyzed Transformations

AU Tietze, Lutz F.; Ila, Hiriyakkanavar; Bell, Hubertus P.

CS Institut fuer Organische Chemie, Georg-August-Universitaet, Goettingen, D-37077, Germany

SO Chemical Reviews (Washington, DC, United States) (2004), 104(7), 3453-3516

CODEN: CHREAY; ISSN: 0009-2665

PB American Chemical Society

DT Journal; General Review

LA English

AB A review. Palladium-catalyzed enantioselective methods were reviewed. These processes are environmentally benign. A disadvantages of palladium-catalyzed transformations are the high price of palladium and usually low turnover nos., which make them too expensive for industrial use. From this review it can be seen that new ligands can be developed which allow the use of chiral palladium catalysts with a turnover number of 1010, although up to now with low enantioselectivity. A review.

RE.CNT 445 THERE ARE 445 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT Addition reaction

Addition reaction catalysts

Alkenylation

Alkenylation catalysts

Carbonylation

Carbonylation catalysts

Cross-coupling reaction

Cross-coupling reaction catalysts

Cyclization

Cyclization catalysts

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Cycloaddition reaction  
 Cycloaddition reaction catalysts  
 Diels-Alder reaction  
 Diels-Alder reaction catalysts  
 Fluorination  
 Fluorination catalysts  
 Hydrogenation  
 Hydrogenation catalysts  
 Hydrosilylation  
 Hydrosilylation catalysts  
 Michael reaction  
 Michael reaction catalysts  
 Suzuki coupling reaction  
 Suzuki coupling reaction catalysts  
 (stereoselective; stereoselective palladium-catalyzed synthetic methods  
 and development of chiral ligands)

L4 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2000:890950 CAPLUS  
 DN 134:198641  
 TI New [Ru(NH3)6]MF6 phases: precursors to catalysts for halogenation  
 reactions  
 AU Subramanian, M. A.; Harlow, R. H.; Rao, V. N. M.  
 CS Experimental Station, Central Research and Development Department, E. I.  
 Du Pont de Nemours and Co., Wilmington, DE, 19880-0328, USA  
 SO Materials Research Bulletin (2000), 35(10), 1587-1592  
 CODEN: MRBUAC; ISSN: 0025-5408  
 PB Elsevier Science Inc.  
 DT Journal  
 LA English  
 AB A series of hexamminoruthenium(III)-hexafluorometallates of the type  
 [Ru(NH3)6]MF6 (M = Al, Ga, In, Sc, V, Cr, Fe) were synthesized for the  
 first time from the aqueous solns. of the corresponding salts. All these  
 compds. crystallize in a cubic structure (space group Pa3). The structure  
 consists of [Ru(NH3)6]3+ and [MF6]3- octahedral units arranged in a rock  
 salt-type lattice and are fixed in the lattice by weak hydrogen bonds.  
 Thermogravimetric studies showed that the phases undergo in situ reduction at  
 280-300°C in inert atmospheric to form homogeneously dispersed Ru(0) and  
 metal fluorides. Depending on the decomposition conditions and M cation  
 various forms of metal fluorides can be stabilized. It has been  
 demonstrated that hexamminoruthenium (III) hexafluorometallates are ideal  
 precursors for preparing Ru(0) supported on metal fluoride catalysts for  
 processing various halogenated hydrocarbons through hydrogenation and  
 fluorination chemistries.  
 RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT Crystal structure  
 Fluorination catalysts  
 Halogenation catalysts  
 Hydrogenation catalysts  
 Molecular structure  
 Thermal decomposition  
 ([Ru(NH3)6]MF6 phases as precursors to catalysts for halogenation  
 reactions)

L4 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1995:980960 CAPLUS  
 DN 124:32444  
 TI Preparation and properties of some polyfluorinated pentanes  
 AU Bispen, T. A.; Borutskaya, G. V.; Mikhailova, T. V.; Moldavskii, D. D.;  
 Furin, G. G.

## CAS ONLINE PRINTOUT

CS RNTs "Prikladnaya Khimiya", St. Petersburg, Russia  
SO Zhurnal Prikladnoi Khimii (Sankt-Peterburg) (1995), 68(5), 793-6  
CODEN: ZPKHAB; ISSN: 0044-4618  
PB Nauka  
DT Journal  
LA Russian  
AB SbF5 was used as a catalyst in reaction of hexafluoropropylene with tetrafluoroethylene to prepare perfluoro-2-pentene. Perfluoro-2-pentene was hydrogenated or fluorinated over Pd catalyst to prepare polyfluorinated pentane refrigerants.  
IT Addition reaction catalysts  
Fluorination catalysts  
Hydrogenation catalysts  
(preparation of polyfluorinated pentane refrigerants)

L4 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1995:870968 CAPLUS  
DN 123:298201  
TI GIPKH catalysts  
AU Yurchenko, E. N.; Kramareva, G. E.; Zubritskaya, N. G.; Gaidei, T. P.  
CS Russian Scientific Center Applied Chemistry, St. Petersburg, 197198, Russia  
SO Reaction Kinetics and Catalysis Letters (1995), 55(2), 425-32  
CODEN: RKCLAU; ISSN: 0304-4122  
PB Akademiai Kiado  
DT Journal; General Review  
LA English  
AB A review with 13 refs.; in the Russian Scientific Center Applied Chemical catalysts have been developed for the gas-phase fluorination of orgs., including chlorine-containing substances, hydrogenation and reductive amination of organic substances, decomposition of liquid substance to gases, complete oxidation and reduction, suitable for environmental protection.  
IT Decomposition catalysts  
Fluorination catalysts  
Hydrogenation catalysts  
Oxidation catalysts  
Reduction catalysts  
(GIPKH catalysts)

L4 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1995:470336 CAPLUS  
DN 122:213602  
TI Process for the preparation of 1,1,1,3,3-pentafluoropropane  
IN van der Puy, Michael; Eibeck, Richard Elmer; Ellis, Lois Anne Shorts; Madhavan, Gajavalli Venkatrao B.  
PA Alliedsignal Inc., USA  
SO PCT Int. Appl., 13 pp.  
CODEN: PIXXD2

DT Patent  
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 9504022	A1	19950209	WO 1994-US8263	19940722
	W: CA, CN, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2166971	AA	19950209	CA 1994-2166971	19940722
	CA 2166971	C	20050927		
	EP 717728	A1	19960626	EP 1994-922677	19940722
	EP 717728	B1	19981104		
	R: AT, BE, DE, ES, FR, GB, IT, NL				

## CAS ONLINE PRINTOUT

	CN 1128016	A	19960731	CN 1994-192923	19940722
	JP 08511271	T2	19961126	JP 1994-505895	19940722
	AT 172953	E	19981115	AT 1994-922677	19940722
	ES 2123803	T3	19990116	ES 1994-922677	19940722
	US 5728904	A	19980317	US 1996-679938	19960715
PRAI	US 1993-99676	A	19930729		
	WO 1994-US8263	W	19940722		
	US 1994-361005	B1	19941221		
OS	CASREACT 122:213602				
AB	The invention relates to the manufacture of 1,1,1,3,3-pentafluoropropane, CF <sub>3</sub> CH <sub>2</sub> CF <sub>2</sub> H (HFC-245fa) (I) by a 3-step process comprising: (1) formation of CCl <sub>3</sub> CH <sub>2</sub> CCl <sub>3</sub> (II) by telomerization of CCl <sub>4</sub> with vinylidene chloride; (2) conversion of II to CF <sub>3</sub> CH <sub>2</sub> CF <sub>2</sub> Cl (III) by reaction with HF in the presence of a fluorination catalyst selected from TiCl <sub>4</sub> , SnCl <sub>4</sub> , or mixts.; and (3) hydrogenation of III to give I. For example, the 1st step was conducted at 150° and over 20 psig (starting pressure at room temperature) using CuCl and CuCl <sub>2</sub> catalysts, to give 77% II. The 2nd step, at 120° and over 400 psig, using TiCl <sub>4</sub> catalyst in excess HF, gave 69% III plus some CF <sub>3</sub> CH <sub>2</sub> CF <sub>3</sub> byproduct. Finally, hydrogenation of III over Pd/C at 200-225° and atmospheric pressure in a flow apparatus, or at 250 psig in an autoclave, gave I plus varying amts. of unreacted III.				
IT	Hydrogenation catalysts (palladium and related metals; preparation of pentafluoropropane)				
IT	Fluorination catalysts (titanium and tin tetrachlorides; preparation of pentafluoropropane)				

L4 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1990:234784 CAPLUS

DN 112:234784

TI Process for the preparation of 1,1,1,2-tetrafluoroethane by a selective hydrogenation of 1,1-dichloro-1,2,2,2-tetrafluoroethane

IN Oshio, Hideki; Mishumi, Sadaharu; Yagii, Kiyoshi; Yoshikawa, Satoshi; Murata, Katsuyoshi

PA Central Glass Co., Ltd., Japan

SO Ger. Offen., 8 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3917573	A1	19891214	DE 1989-3917573	19890530
	JP 01301630	A2	19891205	JP 1988-132395	19880530
	JP 06029201	B4	19940420		
	JP 02164834	A2	19900625	JP 1988-320077	19881219
	JP 06092325	B4	19941116		
	JP 02172934	A2	19900704	JP 1988-324998	19881223
	JP 06092326	B4	19941116		
	JP 02188537	A2	19900724	JP 1989-7056	19890113
	US 4996379	A	19910226	US 1989-357291	19890526
	FR 2631959	A1	19891201	FR 1989-7005	19890529
	GB 2219796	A1	19891220	GB 1989-12325	19890530
	GB 2219796	B2	19911204		
PRAI	JP 1988-132395	A	19880530		
	JP 1988-320077	A	19881219		
	JP 1988-324998	A	19881223		
	JP 1989-7056	A	19890113		

AB The title compound, useful as a refrigeration agent, was prepared by a selective (90-91%) hydrogenation of CFCl<sub>2</sub>CF<sub>3</sub> (I) containing ≤25% (CF<sub>2</sub>Cl)<sub>2</sub>, by 2-4 mol H at 120-200°, in the presence of a catalyst comprising 0.2-5% Pd on an alumina pretreated by dichlorotetrafluoroethane

CAS ONLINE PRINTOUT

at a higher temperature The starting compound I with a lower content of (CF<sub>2</sub>Cl)<sub>2</sub>.

was prepared by a gas phase reaction of CCl<sub>3</sub>CF<sub>3</sub> with HF in the presence of a partially fluorinated γ-alumina catalyst, with a selectivity for I of 97.9-99.8%.

IT Hydrogenation catalysts

(palladium on alumina, for dichlorotetrafluoroethane)

IT Fluorination catalysts

(partially fluorinated alumina, for trichlorotrifluoroethane)

L4 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1979:540259 CAPLUS

DN 91:140259

TI Chemistry in hydrogen fluoride. V. Catalysts for reaction of hydrogen fluoride with halogenated olefins

AU Feiring, A. E.

CS Cent. Res. Dev. Dep., E. I. du Pont de Nemours and Co., Wilmington, DE, 19898, USA

SO Journal of Fluorine Chemistry (1979), 14(1), 7-18

CODEN: JFLCAR; ISSN: 0022-1139

DT Journal

LA English

AB TiF<sub>5</sub>, NbF<sub>5</sub>, TiCl<sub>4</sub> and MoCl<sub>5</sub> catalyzed the addition of HF to Cl<sub>2</sub>C:CCl<sub>2</sub> and Cl<sub>2</sub>C:CHCl and related compound Hydrogenation of Cl<sub>2</sub>C:CCl<sub>2</sub> to Cl<sub>2</sub>CHCHCl<sub>2</sub> was observed using H, methylcyclopentane, and TaF<sub>5</sub> in HF.

IT Hydrogenation catalysts

(hydrofluoric acid-tantalum pentafluoride, for tetrachloroethylene)

IT Fluorination catalysts

(tantalum pentafluoride, for polychloroethylene and -ethanes by hydrofluoric acid)

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